Exploratory Study in Critical Success Factors for e-Management Implementation Success in Al-hukama Firm for Producing Drugs and Medical Requirements

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Abstract: Many firms across the world have been adopted e-management implementation and has become a key business driver in today's world, but e-management implementation success rates are unsatisfactory and still remain very low. Therefore, this issue have been investigated by many researchers all over the world to identify the critical success factors. These the study it is necessary to can be used as a theoretical foundation upon which to base decision-making and strategic thinking about e-management implementation. This paper proposes a new framework for critical factor success for Al-hukama firm to success of the e-management implementation by using fuzzy logic analysis. Therefore, the purpose of this the study is to describe critical success factors for e-management implementation for empowering Al-hukama firm of investigation of the success in has been adopted this is the projects. These the study has been building by focusing on questionnaires and group of interviews to specific data collection from sample in Al-hukama firm. The findings of the questionnaire confirmed the importance of the critical success factors of Al-hukama firm in adopting e-management.

Key words: E-management, critical success factors, Al-hukama Firm.

1. Introduction

Information technology (IT) is the backbone of any business where it would be impossible to function without it. In order to enable organizations to stay competitive, attention to the issues related to successful projects has been tracked by academics and practitioners. With the expectation to make a significant contribution to the organization's efficiency, effectiveness, and competitive positioning, there are many indications that organizations are spending enormous amounts of money investing in IT [1]. Therefore, is electronic management of information technology projects, which if have implemented of successfully, it will lead to the implementation of the business efficiently [2]. Currently, a gap exists between academia and practitioners regarding the discovery of factors that influence on e-management system success. Researchers were becoming aware of that if we did not know what factors affected the success of e-management, we could not that go beyond limitations facing the implementation of electronic management system [3]. This study contributed to existing knowledge across exploring projects critical success factors of e-management, in order to provide some new ideas to solve the problems which are facing e-management implementation and its success in Al-hukama firm.

2. Literature Review

Our literature review focused on two major issues; (1) e-management and (2) critical success factors.

2.1 E-Management

The e-management represents the type of management necessary to put into practice within the e-businesses. The e-management project is designed to manage various Macro and Micro activities efficiently. The Macro aspect include Decision-making and planning, Strategic management and policy, Controlling and evaluating and Governance and regulatory control. On the other hand the Micro involves staffing, financing, curricula design process, instructional materials and methods as well as other daily activities and responsibilities [4]. The project of e-management transforms a Classic Management System into a system of: Availability; Performance; Capability; Change solutions; Security; Catastrophe management, and so on [5]. We all must know the necessity of this new way of management, taking into account the fact that the transition towards this concept is achieved by covering three essential transformation stages:

Business as usual but much faster – being necessary to manage businesses that have as foundation the use of e-technologies, such as the e-mail, web sites, online research, e-technologies that, by simply accessorizing the offices, actively participate to the augmentation of productivity [5].

Some businesses, new channels – opening the cyber market has created new business, communication and distribution channels towards the clients, which implies the evolution of the business towards new aspects, such as: e-commerce, markets, internet marketing and intranets [5].

The e-management revolution. "Welcome to the revolution" – explores the way in which the Web inventors' dreams have led to a constant flux of new web based applications and the way that these applications, once absorbed by the market, change the image of the businesses as we know it at present [5].

2.2 Critical Success Factors

Critical Success Factors are defined as "factors needed to ensure a successful e-management project [6]. In this context, it will be shown some of the previous studies on critical success factors for IT projects (e.g. e-management, e-commerce, e-government, ERP). An investigative study was conducted by [1] which of the main factors that affect IT projects success in Saudi Arabian public firms. The authors was used questionnaire method to collect data. The findings of the questionnaire confirmed the importance of those seventeen factors, and the critical success factors (CSFs) of IT projects in Saudi Arabian public firms to be found are: top management support and commitment, project management, project team competency, communication management, strategic planning, training and education, partners and suppliers management, and stakeholders management. In another study which was conducted by [7] that has been aimed to analysis and measure the critical success factors that effect on success of e-bank portals using fuzzy AHP and VBA. The main conclusion in this study has been the factors trust and portal content quality obtained the best score of all in the consolidated evaluation. [8] examines the literature on enterprise resource planning in their study which aimed to establish whether the critical success factors for achieving stages of an ERP project. The authors used 236 papers related to CSFs on ERP were selected for analysis. The authors employed procedures from qualitative and interpretive research methods, to analyse and interpret the material using five-step procedure of gathering, categorising, coding, analysing and comparing the data. The findings from this study have shown that a limited number of CSFs have been empirically investigated for their role in, and effect on, implementation success or post-implementation performance outcomes. Moreover, a study was conducted by [9] that were aimed to identify the major success factors when using information systems in the hospitality industry, as well as factors that may obstruct organizations from being competitive. It was most important findings in this study of the absence of integration of application software supporting other business areas like golf and health centers had

consequences in the quality of service rendered to the customers. [10] was explored and investigate in its study that aims to the critical factors affecting e-government adoption the key challenges that influence e-government implementation and the factors influencing citizen adoption in Vietnam. It develops a conceptual framework on the basis of existing experiences drawn from administrative reforms. The study used sample of about 450 potential public employee were surveyed across research questionnaires. Implications of this study identified factors that determine if the citizen will adopt e-government services and thereby aiding governments in accessing what is required to increase adoption.

During the review of the literature found that a number of factors that can affect e-management success in all types of firms, Table 1 summarizes the findings.

Table 1. Success Factors Identified of e-Management in Implementation Literature

Success Factors	**Literature**
IT Readiness	(Somers and Nelson, 2004; Kumar et al., 2002; Gupta, 2000; Al-Mudimigh, 2007)
Top Management Support and Commitment	(Fortune and White, 2006; Jiang et al., 1996; Holland and Light,1999; Shanks et al., 2000; Young and Jordan, 2008; Al-Mudimigh et al., 2011; Dezdar and Ainin, 2012)
Project Team	(Shanks et al., 2000; Ross, 1999; Holland and Light, 1999; Sumner, 1999; Jiang et al., 1996; Alghathbar, 2008; Dezdar and Ainin, 2012)
Stakeholders Management	(Shenhar and Dvir, 1996; Crawford, 2005; Morris et al., 2006; Bourne and Walker, 2008; PMI, 2004; Abouzahra, 2011)
Monitoring and evaluation of performance	(Cameron & Meyer, 1998; Kuang et al., 2001; Fang, 2005)
Training and Education	(Finney and Corbett, 2007; Kumar et al., 2002; Robey et al., 2002; Mandal and Gunasekaran, 2003; Aladwani, 2001)
Business Plan and Vision	(Roberts & Barrar, 1992; Ross, 1999; Rosario, 2000; Nah et al., 2003)
Communication Management	(Ross, 1999; Rosario, 2000; Jiang et al., 1996; Holland and Light, 1999; Sumner, 1999; Al-Mashari and Al-Mudimigh, 2003; Dezdar and Ainin, 2012; Nah et al., 2007)

Source: Author based on [1]-[11].

Therefore, I can say that the critical success factors for the success of e-management implementation are as follows: IT readiness, top management support and commitment, project team, stakeholders management, monitoring and evaluation of performance, training and education, business plan and vision, communication management, and as illustrate as follows:

- **IT Readiness:** One of the important requirements of the success of an e-management [12], [13]. This means that computers should be available to employees and the hosting network being capable of providing the informations at a speed, security level and reliability that is deemed necessary for e-management project [12].
- **Top Management Support and Commitment:** Top management play a crucial role in the success of the e-management [14], [15]. The support of senior management are the strong commitment to provide successful information technology, and communicating IT strategy for all employees in the firm [16]. In addition, senior management is committed to support champion of the project and costs, ethically, morally, financially and any other requirements [17], [18].
- **Project Team:** The project team is one of the most critical success factors [19], [20] and characterized the project team through project composition, which combines firm managers and consultants and internal staff to get enough experience. The skills of the team must select internal staff who have a set of skills and knowledgeable of the firm [21].

- **Stakeholders Management:** There is participation and communication between different stakeholders in different departments and e-management team. So, e-management facilitate communication between departments and ensure the work operating continually [22].
- **Monitoring and evaluation of performance:** Researchers stated that the monitoring and evaluation of the performance is a critical factor for the success of e-management [19]-[20] and was focused on the absence of e-management project of glitches, so all efforts should be focused towards the removal of the problems facing the implementation of the project. Therefore, the researchers were confirmed on the appointment of leader of the project is responsible for the result of the implementation of the project. Thus achievement should be measured against the objective of the project [21].
- **Training and Education:** Many researchers have stressed the importance of training and education, and include training and education to develop the skills of the team as well as training of users to deal with electronic management, and thus must be understood users of e-management system [23].
- **Business Plan and Vision:** Should include e-management project of clear vision, goal and business plan, and the plan should include specify benefits, resources, costs, risks and a timeline [24], [25].
- **Communication Management:** Considered fundamental factor, and researchers have debated here that the communication must be between senior management and the project team as well as communications between members of the same team [23].

Based on the above discussions and on critical success factors and previous work, taking these arguments together allows proposing (see Fig. 1) the following set of research hypotheses:

H1: IT Readiness increases the level of e-management implementation success.

H2: Top management support and Commitment increases the level of e-management implementation success.

H3: Project Team increases the level of e-management implementation success.

H4: Stakeholders Management increases the level of e-management implementation success.

H5: Monitoring and evaluation of performance increases the level of e-management implementation success.

H6: Training and Education increases the level of e-management implementation success.

H7: Business Plan and Vision increases the level of e-management implementation success.

H8: Communication Management increases the level of e-management implementation success.

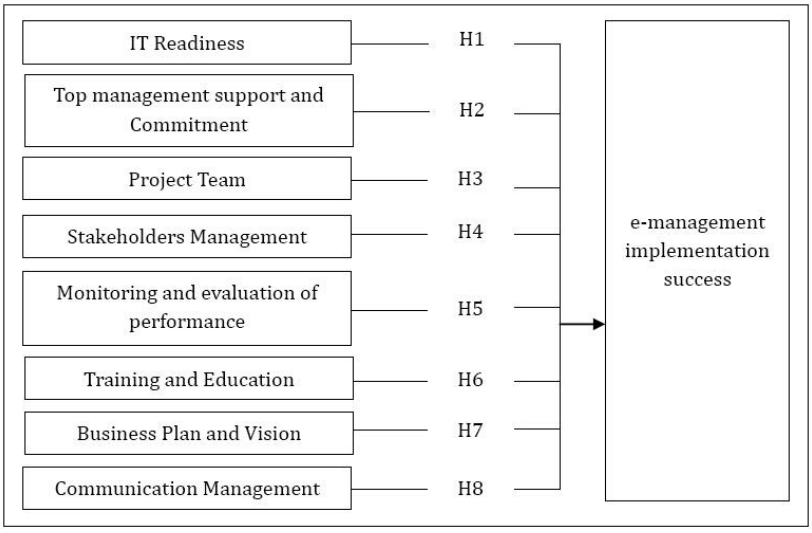

Fig. 1. Proposed study model.

3. Research Methodology

3.1. Data Collection

The research steps including IS and IT Literature review, factors extraction, Extracting factor assessment questions, data collection, data analysis, and finally applying the model on Al-hukama firm. The questionnaire used in two directions:

1) The questionnaire used for data collection contained scales to measure the various factors of the research model. The survey instrument asked the experts to rate the impact of 8 identified factors on e-management success using expressions relevant to irrelevant.
2) The questionnaire used for data collection contained scales to measure e-management success using items ranged from 1 (Strongly disagree) to 5 (Strongly agree). The questionnaire then was distributed to CIO, IT Director, IT Manager, IT Consultant and IT Professional, departments managers and employees of department of management information systems. A set of a questionnaire was created, which contained a total of 24 questions (see appendix. the questionnaire is based on [11]). The questionnaire was completely paper based and respondents were required to return the questionnaire before the given deadline. This ensured the completion of the questionnaire within a limited time frame. All the questionnaires were complete and therefore, were useful in our study. Thus, a very high response rate was achieved. Personal interviews were also carried out with the e-management support staff in firms. Interviews were carried out with the support staff of firms. With these interviews, we were able to conduct a meaningful discussion and generate a fruitful feedback. These interviews offered a clearer picture and deeper understanding of critical factors success of e-management in Al-hukama firm.

3.2. Data Analysis

The data collected was subsequently analyzed on mean and fuzzy logic. The analyzed data was afterwards synthesized and presented in the form of Table 2. In the event of an invalid answer or an unanswered question, the question was deemed void and was not used in the analysis. Fuzzy logic was initiated in 1965 by Lotfi A. Zadeh, professor for computer science at the University of California in Berkeley. Basically, Fuzzy logic is a multivalued logic, that allows intermediate values to be defined between conventional evaluations like true/false, yes/no, high/low, etc. Notions like rather tall or very fast can be formulated mathematically and processed by computers, in order to apply a more human-like way of thinking in the programming of computers. Fuzzy systems is an alternative to traditional notions of set membership and logic that has its origins in ancient Greek philosophy. The precision of mathematics owes its success in large part to the efforts of Aristotle and the philosophers who preceded him [26]. The fuzzy membership function adopted in this paper can be specified as follows [12]:

$$\mu_x(x)=\begin{cases}0: & Y(X)\le 2.05\\ 0.05+\left[1+\left(\left(Y(X)-2.05\right)/\text{Std. Deviation}\right)^{-2}\right]^{-1} & \ldots \quad Y(X)>2.05\end{cases}$$

3.3. Results of the Reliability Test

Cronbach's coefficient alpha was calculated to test reliability of each scale, as recommended by [27]. All sub-scales exhibited well over the minimum acceptable reliability level of 0.7. Therefore, the researcher have been examined the questionnaire reliability and the results have been confirmed that the Cronbach's alpha values is 0.90. Thus this indicates that the variables were internally consistent and the scales deemed reliable for further analyses.

4. Analysis and Discussion

Table given below shows the results of the fuzzy logic analysis for each factor.

Table 2. Results of the Fuzzy Logic Analysis

Variables	Mean	Membership Function	The Level of Acceptance (%)
IT Readiness			
X1	1.45	0.66	66
X2	1.50	0.69	69
X3	1.70	0.77	77
Average			71
Top Management Support and Commitment			
X7	1.45	0.66	66
X8	1.65	0.75	75
X9	1.65	0.75	75
Average			73
Project Team			
X10	1.45	0.66	66
X11	1.50	0.69	69
X12	1.70	0.77	77
Average			71
Stakeholders Management			
X16	1.65	0.75	75
X17	1.65	0.75	75
X18	1.35	0.60	60
Average			71
Monitoring and evaluation of performance			
X19	1.70	0.77	77
X20	1.75	0.79	79
X21	1.55	0.71	71
Average			76
Training and Education			
X22	1.10	0.40	40
X23	1.35	0.60	60
X24	0.60	0.05	5
Average			32
Business Plan and Vision			
X25	1.90	0.84	84
X26	1.45	0.66	66
X27	1.65	0.75	75
Average			76
Communication Management			
X28	1.65	0.75	75
X29	1.60	0.73	73
X30	1.55	0.71	71
Average			73

Having been illustrate the Table 1, the IT readiness was got on the average of 71%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of IT infrastructure adequate, networking and the security issues. Further, the top management support and commitment was got on the rate or Average of 73%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of an existence of required support from top management as well as support financially. While, the project team was got on the Average of 71%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of the managers and consultants as part of the implementation of e-management project as well as set of skills and the empowerment for project team members. The stakeholders management was got on the Average of 71%,

which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of communication between departments managers, participating for customers and communication between senior management and e-management project team. Therefore, the monitoring and evaluation of performance was got on the Average of 76%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of the monitoring processes on implementation of the e-management project. Thus, the training and education was got on the Average of 32%, which under the threshold of the cutting, is amounting to 53% and this is evidence of a existence of weakness in supporting of training and education processes. Conversely, the business plan and vision was got on the Average of 76%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of both documented business plan and documented vision and mission for the e-management project. However, the communication management was got on the Average of 73%, which has been exceeded the threshold of the cutting, is amounting to 53% and this is evidence of a existence of information flow between the team individuals and project manager, Communications between senior management and the project team and Communications plan for e-management implementation. Finally, overall findings are summarized as below:

Table 3. Findings Summarized of the Study Hypotheses

Hypotheses	The Critical Success Factors of E-management success	Result
H1	IT Readiness increases the level of e-management implementation success	Accept
H2	Top management support and Commitment increases the level of e-management implementation success	Accept
H3	Project Team increases the level of e-management implementation success	Accept
H4	Stakeholders Management increases the level of e-management implementation success	Accept
H5	Monitoring and evaluation of performance increases the level of e-management implementation success	Accept
H6	Training and Education increases the level of e-management implementation success.	Reject
H7	Business Plan and Vision increases the level of e-management implementation success	Accept
H8	Communication Management increases the level of e-management implementation success	Accept

5. Conclusions

This paper has presented an empirical study of e-management implementation success factors in Al-hukama firm. The findings of the study proposed eight factors as critical success factors of e-management implementation success in the Al-hukama context. These are: IT readiness, top management support and commitment, project management, project team, stakeholders management, monitoring and evaluation of performance, training and education, business plan and vision and communication management and these the factors impact the decision to adopt e-management system implementation in Al-hukama firm. Our analysis from during the fuzzy logic of critical success factors for e-management implementation success was found that the most important success factor was e-management implementation success. Therefore, the most of this is the factors have been accepted. The most critical indicators were towards training and education, but in spite of that firm can its processing, so as not to facing any problems during implementation of e-management. For future work, the impact of critical success factors for e-management project on have been adopted e-government system.

Appendix

Critical Success Factors of e-Management Implementation Success Questionnaires

The scale	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
Weight	1	2	3	4	5

R	Questions	1	2	3	4	5
IT Readiness						
1	Existence of adequate IT infrastructure.					
2	Existence of adequate networking infrastructure.					
3	Interest of our firm to the security issues.					
Top Management Support and Commitment						
4	Existence of required support from top management to e-management project.					
5	Existence of support financially from top management to e-management project.					
6	Existence of communicating IT strategy for all employees in the firm from top management to e-management project.					
Project Team						
7	Existence of the managers and consultants as part of the implementation of e-management project.					
8	Existence of set of skills for Project Team members.					
9	Existence of the empowerment for project team members.					
Stakeholders Management						
10	Existence of communication between departments managers for implementation of e-management project.					
11	Existence of communication between senior management and e-management project team.					
12	There is participating for customers as stakeholders to implementation of e-management project.					
Monitoring and evaluation of performance						
13	Existence of the monitoring processes on implementation of the e-management project.					
14	Existence of measurements for evaluation of performance of the e-management project.					
15	Existence of plan for the removal of the problems facing the implementation of e-management project.					
Training and Education						
16	Existence of are clear strategy for education and training.					
17	Existence of training program for e-management implementation project team.					
18	Existence of training program for e-management project users.					
Business Plan and Vision						
19	Existence of documented business plan for the e-management project.					
20	Existence of documented vision and mission for the e-management project.					
21	Did you specify the overall goals for implementation of e-management project.					
Communication Management						
22	Existence of information flow between the team individuals and project manager.					
23	Existence of Communications plan for e-management project implementation.					
24	Existence of Communications between senior management and the project team.					

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